Greenfield vs. Acquisition:
The Strategy of Japanese Investors in the United States

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Abstract

Multinational firms can enter a foreign market by taking over existing local firms (acquisitions) or by setting up new ventures (greenfield investments). Surprisingly, there has been limited empirical work on this topic. This paper examines the determinants of this choice by looking at Japanese entries into the United States. By focusing on firms of one country entering a single market, we are able to separate the impact of a firm's strategy from that of the characteristics of the target industry or country.

The paper tests simultaneously a number of competing hypotheses. The results suggest that acquisitions are used by Japanese investors with weak competitive advantages, while investors with strong advantages find that greenfield investments are a more efficient way to transfer these advantages to the U.S. Acquisitions are also chosen to enter industries with either very high or very low growth rates, when entry is at a scale that is large relative to the parent, and when entry is into a different industry. The Japanese investor's previous experience of the U.S. market, its financial situation, and its status as a follower in an oligopolistic industry have no statistically significant impact on the entry mode. Neither do U.S. stock market conditions.

1. Introduction

A firm which expands into foreign markets must choose between keeping or sharing control of its subsidiaries. It must also decide whether to acquire an existing local firm (make an acquisition) or to build a new plant (make a greenfield investment). While some recent empirical research (Gatignon and Anderson 1988; Gomes-Casseres 1989, 1990; Sanna-Randaccio 1990; Hennart 1991a) has investigated the choice between full and partial control of subsidiaries, there have been very few large-sample, multivariate studies of the determinants of the choice between greenfield entry and acquisitions (Caves and Mehra 1986; Kogut and Singh 1988; Zejan 1990). The topic has been similarly neglected in the domestic context, with Yip (1982) being, to the best of our knowledge, the only empirical study of the determinants of domestic expansion through internal growth or acquisitions.[1]

This study is the first to explore the factors which cause Japanese investors to enter the U.S. through acquisitions rather than through greenfield investments. A significant contribution of the paper is the focus on entries by firms of a single country (Japan) into a single market (the U.S.). Previous empirical studies have either focused on entries in the United States by firms based in a large number of foreign countries (Caves and Mehra 1986; Kogut and Singh 1988) or on firms based in a single country (the U.S. for Dubin 1976; Sweden for Zejan 1990) entering a large number of foreign countries. Studying entry by firms based in different countries makes it difficult to model parent strategies, as collecting comparable data on firms registered in many different countries is next to impossible due to

international differences in accounting rules and reporting requirements. The tendency is then to model parent strategies with data on the industry of the investor or that of the U.S. sector entered, making it difficult to separate the impact of parent strategies from that of the target U.S. industry. While this problem does not arise when one looks at foreign entries by U.S. investors, the influence of parent characteristics becomes tricky to separate from that of host country regulations and investment climates.

By concentrating on Japanese investors in the U.S., we can describe parent strategies through a rich array of firm-level data while also taking into consideration the characteristics of the U.S. industries penetrated by Japanese investors, thus bringing out more clearly the impact of a firm's strategy on the method it chooses to enter foreign markets.

The next section reviews the main theoretical approaches to the choice between greenfield entry and acquisition and identifies the principal variables. Section 3 describes the methodology and the elaboration of the variables. Section 4 reports the results, while Section 5 presents our conclusions.

2. The Choice between Greenfield Entry and Acquisition

There is no well developed theory of the determinants of the choice between domestic expansion through internal growth or acquisitions, and this is also true of the choice between greenfield investment and acquisitions as alternative ways of entering foreign markets. Four bodies of theory have, however, addressed issues that are relevant for an understanding of this choice: (1) Transaction cost theory, which explains why firms invest in

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foreign countries, can be extended to show how the type of advantages exploited by the investor affects the mode of entry; (2) the theory of mergers and acquisitions, although it has been mostly interested in explaining why acquisitions take place, has also explored why acquisitions are preferred to mergers;[2] (3) Edith Penrose (1959), in her theory of the growth of the firm, has discussed the choice between growth by acquisition and growth by internal expansion; (4) lastly, Chatterjee (1990) has discussed how capital market imperfections may affect the relative cost of these two modes of entry.

2.1. Transaction Cost Theory

For the transaction cost theory of foreign direct investment (FDI) the essence of FDI is the cross-border expansion of firms. Two conditions must be met for this expansion to take place: (1) locating facilities abroad must be more efficient than exporting to foreign markets from a domestic location; (2) a firm must find it desirable to own the foreign facilities, i.e. to organize its interdependence with foreigners through hierarchical rather than through market methods. The major reason why firms find it advantageous to organize their cross border interactions through hierarchy is that the costs of organizing interdependences in markets are higher than those of organizing them within multinational firms (Hennart 1982).

There is now an abundant literature which discusses the types of interdependences that are likely to be more efficiently organized within multinational firms than through international markets, and which therefore lead to FDI (see Hennart, 1991b for a recent survey). FDI takes place when firms internalize markets for certain intermediate inputs, such as raw

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materials, parts and equipment, loanable funds, knowledge and goodwill. For example, a firm which wants to exploit abroad its firm-specific knowledge will choose to transfer this knowledge internally rather than license it to foreign producers if the market for this knowledge is subject to high transaction costs.

While there has been much research on why firms invest abroad, much less attention has been focused on the implication of the theory on the choice between greenfield entry and acquisition. Yet it is possible to extend the theory to show how a foreign investor's choice of mode of entry will depend on the nature of the firm-specific advantages that it brings or seeks to obtain in the target market.

A firm investing abroad combines some firm-specific advantages developed at home, and which can be exploited abroad at low marginal cost, with other assets available in the foreign country. The level and nature of the firm-specific advantages the investor is exploiting abroad determines whether entry will be through greenfield or acquisition.[3] Firm-specific advantages may be of two types: they may consist in superior organizational ability or technical expertise that can be separated from the organization, or they may be deeply embedded into the firm's labor force. In the first case, an entrant can combine these advantages with those embodied in an acquired foreign firm. In the second case, advantages will be so tightly bound to the foreign investor's organization that they cannot be combined with an acquired unit and must instead be exploited by recreating on foreign soil a clone of the foreign parent.

The latter case characterizes the firm-specific advantages that support the entry of some of the more technologically advanced Japanese investors. Dunning's (1986) study of Japanese investment in the United Kingdom identifies superior quality as one of the major competitive advantage that R&D intensive Japanese investors have over their British competitors. That high quality is achieved through sophisticated labor management practices, such as work teams, or careful selection and training of the labor force (Pucik and Hatvany 1983; Aoki 1988; Florida and Kenney 1991). Greenfield entry is the most efficient way to transfer these advantages to foreign countries because it makes it possible to install the firm's managerial practices from the outset. A firm making a greenfield investment is able to mold the affiliate by choosing its location and hiring its labor force, while one making an acquisition inherits the acquired firm's labor force and company culture (Jemison and Sitkin 1986). Hence research and development intensive Japanese parents should show a preference for greenfield entry.

Yoshida's interviews of the managers of 15 R&D intensive Japanese subsidiaries in the U.S. confirms this view. The managers he interviewed pointed out that they preferred greenfield entry because "they could transfer or devise their own management systems with freshly hired U.S. employees" and that greenfield entry "offered less risk, in terms of organizational control, than acquisitions" (Yoshida, 1987, pp. 61-62).[4] Kujawa (1984) also reports that Japanese investors in the U.S. showed a marked preference for greenfields over acquisitions "because of the desire to build a company-specific workforce management system." This suggests that

H1: Everything else constant, the greater the Japanese investor's research and development intensity, the higher the probability it will enter through a greenfield investment.

Inversely, acquisitions will be chosen if Japanese investors require complementary inputs which can be more cheaply acquired bundled in a going concern than in disembodied form on the market. Such is the case when the Japanese parent does not know how to run a subsidiary. By making an acquisition the Japanese investor is buying a cadre of local managers who know how to operate in the local economy, and who possess valuable information. We may think of that information as consisting of two components. One component is a general knowledge of the local economy. How to operate in the U.S. market is learned as a by-product of doing business there. This knowledge is tacit, and hence its purchase in disembodied form is subject to high transaction costs (Hennart 1982; 1988). One may therefore expect Japanese entrants with little experience of the U.S. environment to prefer acquisitions (Wilson 1980; Caves 1982). By contrast parents that have made previous investments in the U.S. have presumably accumulated the required knowledge in-house, and do not need to acquire local firms. Hence

H2. Everything else constant, the lesser the Japanese investors' experience of the U.S. market, the greater the likelihood they will enter through acquisitions.

The second type of knowledge held by the management of the acquired unit can be called "product-specific" knowledge, i.e. the knowledge of a particular industry. We would expect a Japanese investor entering the U.S. to manufacture a product which it does not produce in Japan to opt for an acquisition to obtain product-specific knowledge. Again such knowledge is difficult to obtain on the market in disembodied form.

H3. Everything else constant, an entry which represents a diversification for a Japanese investor is more likely to be carried out through an acquisition than through a greenfield investment.

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Similarly, some of the investor's firm-specific advantages can be successfully combined with going concerns, and therefore leveraged through foreign acquisitions. One can think of two such cases. First, the main advantage of diversified firms may consist in sophisticated management control systems. This advantage is embedded in senior managers, and thus generally compatible with quasi-independent subsidiaries managed by local personnel. Its exploitation can therefore be achieved through foreign acquisitions (Caves and Mehra 1986). Dubin (1976), Wilson (1980), Yip (1982), Caves and Mehra (1986), and Zejan (1990) found a correlation between a parent's overall product diversification and its preference for acquisition.

H4: Everything else constant, diversified Japanese investors can be expected to show a higher propensity to enter through acquisitions.

Another firm-specific advantage which the foreign investor can usually successfully combine with a foreign acquisition is marketing knowledge. A domestic example is Philip Morris' entry into the beer industry through its purchase of Miller Brewing. Philip Morris firm-specific advantage were its marketing skills, and these skills could be profitably combined with an existing beer brand (Yip, 1982). Similarly, acquisitions make it possible for foreign entrants to acquire local brand names and to combine them with their firm-specific marketing skills. Hence acquisition is likely to be the chosen mode of entry by advertising intensive Japanese firms, especially if they are entering mature industries where established brand names are an asset, and if differences in language and culture reduce the benefits of using their Japanese brand names in the U.S. If this is the case, and if media advertising expenditures in Japan are a good proxy for marketing skills, then

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we would expect advertising intensive Japanese investors to choose

acquisitions.   Hence

H5: Everything else constant, the greater the Japanese investor's advertising
intensity, the higher the probability it will enter through an acquisition.

2.2 Mergers and acquisitions theory

Oster (1990) points out that there are two reasons why a firm would

choose to expand through acquisitions rather than through greenfield

investment.   One reason may be that the target firm represents a "bargain" for

the acquirer, i.e. that the value of the assets acquired is lower than their

replacement cost.   Another possibility is that the investor can leverage its

firm-specific advantages more effectively through an acquisition than through

a greenfield entry.

One key difference between entry through greenfield and entry through

acquisition is that the complementary inputs needed for entry are purchased in

different markets, in the market for inputs (land, machinery) for greenfield

entry, in that for companies in the case of acquisitions.   Hence the choice

between these two entry modes hinges on the relative cost of buying

complementary inputs in these two markets.   Acquisitions will be preferred if

"bargains" can be obtained in the market for firms, and any factor that

depresses the price of stocks should make acquisitions more attractive

relative to greenfield entry.   The relative price of stocks to a foreign

investor depends on the value of the dollar and the extent to which U.S.

stocks are over-or-undervalued (Khoury 1980).[5] In our case,

H6. Everything else constant, the stronger the value of the yen relative to
the dollar, and the lower U.S. relative to Japanese stock market prices, the
higher the attractiveness of entry through acquisition relative to greenfield.

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Whether such bargains do exist in practice hinges on the efficiency of capital markets.

The second reason why acquisitions may be preferred to greenfields is that this mode of entry provides benefits which cannot be obtained through greenfield entry. This is likely to happen in the following three cases. First, acquisitions may confer special advantages if they provide the entrant with market power. By acquiring a rival, a foreign entrant may reduce competition. This benefit cannot be obtained through greenfield entry, since such an entry mode creates a new competitor. This tendency of foreign investors to use acquisitions to enter concentrated industries is countered by the U.S. Department of Justice, which is empowered to ban any acquisition which would significantly increase market power.[6] Hence whether concentration favors acquisitions or not is an empirical question.

Another case where acquisitions may confer special advantages not available through greenfield entry is when speedy entry is desired. Building a subsidiary from scratch takes more time than buying a going concern (Biggadike 1979; Caves 1982). A foreign firm may therefore choose an acquisition if the opportunity cost of delaying entry is high. One can think of two instances when this will be the case. First, when the target market is growing rapidly the opportunity cost of greenfield entry will be high.

H7: Everything else constant, the higher the rate of growth of demand in the target market, the greater the investor's incentive to enter through acquisition.

Second, late entrants ("followers") in oligopolistic industries may choose acquisitions over greenfields in order to speed up their response to

the competitive threat posed by the entry of "leaders" in foreign markets (Knickerbocker 1973; Dubin 1976; Wilson 1980, Davidson 1982, Caves and Mehra 1986; Yu and Ito 1988).

H8: Everything else constant, the probability of entry through acquisition is greater if the Japanese investor is not the first firm in its industry to invest in the U.S.

Lastly, entry through acquisition has clear advantages over entry through greenfield when capacity expansion is undesirable. The greater economies of scale, the more greenfield entry will expand capacity, and the greater the fall in prices. Acquisitions do not add to capacity, and hence should be the preferred entry mode in industries characterized by high scale economies and high concentration (Yip 1982).

H9: Everything else constant, the higher the concentration ratio of the target industry, the greater the likelihood of entry through acquisition.

The mergers and acquisition literature also discusses two problems which are inherent with acquisitions, the inspection and interaction problems (Ravenscraft and Scherer 1987). The inspection problem arises from the fact that the seller of a firm has typically better information than the buyer. Hence a substantial proportion of firms on the market will be "lemons" (Ackerlof 1970). It is not clear why the market for firms is necessarily more imperfect in that regard than the market for inputs, and hence the presence of information asymmetry between Japanese buyers and U.S. sellers may not bias the choice between greenfield and acquisition.

The interaction problem refers to the problem of integrating the new unit into the acquirer's business. Acquisitions differ from greenfield in that

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regard, because they are much more difficult to manage than greenfield plants. As discussed earlier, an acquired unit will have its own "company culture" which may be difficult to meld with that of the acquirer. The less experienced the Japanese parent is with operating in the U.S., the more it may fear post-acquisition management problems.

H10: Everything else constant, the greater the Japanese investor's experience of the U.S. market, the greater its propensity to enter through acquisition.

Everything else constant, differences in company cultures should also be greater when the two firms belong to different industries. Hence,

H11: Everything else constant, the extent of post-acquisition interaction problems will be higher, and hence the probability of entry through acquisition lower, if entry represents a diversification for the investor.

2.3. Theory of the growth of the firm

A parent's human resources endowment may also affect its mode of expansion. If, as Penrose (1959) assumes, there is a maximum rate at which a firm can recruit and train managers, then a firm which is short of personnel is likely to be constrained in its ability to make greenfield investments and may prefer to expand through acquisitions, since acquired units come with their cadre of managers. Managerial constraints on greenfield expansion should be especially tight when the size of the investment is large relative to that of the parent.

H12: Everything else constant, the lower the investor's endowment in human resources, the more likely it will enter through acquisition.

H13 : Everything else constant, the higher the size of the subsidiary relative to that of the investor, the greater the probability of an entry through acquisition.

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2.4. Capital Market Imperfections

Chatterjee (1990) argues that while the valuation that managers put on their own investment projects is generally higher than that put by capital markets, that difference is likely to be greater for greenfield investments than for acquisitions, if only because the market for corporate control provides information on the value of acquisitions, while there is much less information available to stockholders when firms build new plants. Hence it is usually more costly--in terms of its negative impact on the stock price--to use financial resources which require public valuation (i.e junk bonds and equity capital) for greenfield investments than for acquisitions. Greenfield investment will therefore be cheaper to finance through debt or retained earnings. Firms which are highly leveraged may thus find it expensive to enter through greenfield, and may prefer to make acquisitions.

H14: Everything else constant, the more leveraged the foreign investor, the more it will enter through acquisitions.

Table 2 summarizes the various hypotheses that can be derived from the four main theoretical strands. By and large, the theories are complementary, with two exceptions: transaction cost theory predicts that Japanese parents with greater experience of the U.S. market will, ceteris paribus, choose greenfield entry, while, according to merger and acquisition theory, experienced Japanese investors will see themselves more able to handle post-acquisition management problems, and hence are more likely to choose acquisitions. Similarly, transaction cost theory predicts that investors which diversify will seek acquisitions, while merger and acquisition theorists argue that they will opt for greenfield entry so as to minimize interaction problems.

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Note also that the impact of the concentration ratio of the target U.S. industry is unclear. Japanese investors may seek to increase their monopoly power and to minimize increases in capacity by entering concentrated U.S. industries through acquisitions. On the other hand, Japanese acquisitions in concentrated industries may be discouraged by public opinion and antitrust authorities.

3. Methods

Methodology and Dependent Variable

The data used in this study is taken from two separate censuses of Japanese subsidiaries in the United States, one undertaken periodically by Toyo Keizai (1987) and the other by the Japan Economic Institute (1981-1989). Information on the status of a subsidiary at entry (including whether it was acquired or established as a greenfield) is available for the years 1978 to 1980 and 1984 to 1987. An acquisition takes place when one or more Japanese parent acquires an existing U.S. company, and a greenfield investment when one or more Japanese parent builds a new plant. Only manufacturing subsidiaries in which a Japanese parent's stake was at least five percent were retained. The Japan Economic Institute and Toyo Keizai lists 558 such affiliates, of which 203 (36.4%) are acquisitions, and 355 (63.6%) are greenfield investments (Table 1). The proportion of acquisitions is significantly lower than that for other direct investors in the U.S.[7] Lack of parent data reduced our sample size to 270 observations, of which 114 (42.2%) are acquisitions. As shown in Table 1, our sample is representative of the population of affiliates, although with a slight over-representation of acquisitions and of subsidiaries

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in the electrical machinery industry.[8]

Mode of entry is captured by a dummy variable which takes a value of one if the Japanese parent made an acquisition and zero if it established a greenfield plant. Because of the nature of the dependent variable, a binomial logistic model is used in which the probability of acquisition is explained by the variables described below. The regression coefficients estimate the impact of the independent variables on the probability that the entry will be an acquisition. A positive sign for the coefficient means that the variable increases the probability of acquisition. The model can be expressed as

$$P(y_i = 1) = 1/(1 + \exp(-a - X_i B)),$$

where y_i is the dependent variable, X_i is the vector of independent variables for the ith observation, a is the intercept parameter, and B is the vector of regression parameters (Hastings 1986).

Independent Variables

The Japanese parent's technological intensity is measured by its research and development expenditures as a percentage of its domestic sales (RND) for the year preceding entry, as listed in the Japanese parent's report to Japan's Ministry of Finance (<u>Yukashoken Hokokusho</u>). When data was not available from this source, we used the <u>Japan Company Handbook</u>. According to H1, high parent R&D intensity should be associated with a preference for greenfield investment.

A parent's experience of the U.S. market at the time entry was made (EXP) is measured by the number of years between a given entry and the establishment of the parent's first U.S. manufacturing subsidiary. Assuming that the

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parent's level of experience of the U.S. market is proportional to the number of years it has operated in the U.S., the greater EXP, the lower its need to acquire a U.S. firm to obtain knowledge of the U.S. market, and the greater the likelihood that entry will be through greenfield (H2). On the other hand, more experienced Japanese investors may feel better able to take up the challenge of managing a U.S. acquisition (H10). The net effect of EXP is therefore ambiguous.

The commonality of product between parent and subsidiary (COMMON) is measured by a dummy variable equal to one if any one of the products produced by the affiliate matched those produced by the parent, and to zero otherwise. According to transaction cost theory, parents who diversify are likely to prefer acquisition to obtain industry specific knowledge (H3). On the other hand, merger and acquisition theory suggests that they will opt for greenfield entry (H11). Hence we make no prediction for the sign of COMMON.

The degree of product diversification (DIV) of the Japanese parent is measured by a Herfindahl-Hirschman type index. We used the sales breakdown of the Japanese parent the year before entry as published in the <u>Japan Company Handbook</u>. In some cases the total of the shares of identifiable products is not equal to 1 as some product sales are lumped into an "others" category. The formula proposed by Wernerfelt and Montgomery (1986) was used to handle this problem:

$$DIV = 1 - \frac{\Sigma \ (\ m_{ij} \ )^2}{(\ \Sigma \ m_{ij} \ )^2}$$

where m_{ij} is the amount of sales of parent i to product category j. The

higher DIV, the more likely entry will be through acquisition (H4).

ADV is the ratio of media advertising expenditures to sales of the

Japanese parent as listed in the company's <u>Yukashoken Hokokusho</u>. When

advertising expenditure data was not available from this source, we turned to

Toyo Keizai (1991). The greater the Japanese investor's advertising

intensity, the higher the probability entry will take place through

acquisition (H5).

We calculated each year's "Relative Value Index" (RVI) to capture the

availability of "bargains" in the market for acquisitions (H6). RVI is

calculated from data in OECD (1989) using Khoury's (1980) formula:

$$RVI = \frac{\text{change in dollar value of Yen}}{\text{U.S. stock price index / Japanese stock price index}}$$

The RVI is high when acquisitions of U.S. firms are relatively cheap for

Japanese investors, i.e. when the dollar is weakening and U.S. stock prices

are relatively low. An entry made in a year where the RVI is high is more

likely to be an acquisition, hence the sign of RVI should be positive (H6).

The impact of the growth rate of the target U.S. industry on the entry

mode is complex. Both very high and very low shipments growth encourage

acquisition, the former because the opportunity cost of greenfield entry is

larger when the target industry is growing fast than when it is growing more

slowly, the latter because bringing new capacity on line depresses profits in

slow growing markets. Following Caves and Mehra (1986) we calculated

GROWTHDEV to describe the conditions that encourage acquisitions. GROWTHDEV

is the absolute value of GROWTH's deviation from its sample mean divided by its standard deviation, with GROWTH equal to the average annual growth rate of shipments of the four-digit U.S. industry in the 5-years before entry (U.S. Department of Commerce, U.S. Industrial Outlook). Average industry growth rate was used for the few observations with multiple SICs. GROWTHDEV is high when the growth rate of the target U.S. industry is either very fast or very slow. A high value of GROWTHDEV should encourage acquisitions.

A dummy variable (FOLLOW) was used to model the incentives that followers have to enter through acquisitions (H8). We first identified the Japanese parent who was the first to enter any given four-digit SIC U.S. industry. We called that parent a "leader", and all the subsequent entrants "followers". Oligopolistic reaction theory (Knickerbocker 1973) posits that patterns of "follow the leader" will arise in conditions of "loose oligopoly". Consequently FOLLOW takes a value of 1 if the Japanese investor is a follower and if its U.S. subsidiary is active in an industry characterized by "loose oligopoly", and zero otherwise. According to Seno (1983), loose oligopoly occurs in Japan when the Herfindahl-Hirschman index is between 1000 and 1800 or the 3-firm concentration ratio is between 50 and 70 percent. Data on Japanese concentration ratios was obtained from Seno (1983) and Japan Economic Institute (1984). FOLLOW should take a positive sign.

Concentration (CON) is measured by the Herfindahl-Hirschman index for the 50 largest companies for each four-digit SIC U.S. industry (1982), as published in the 1982 Census of Manufactures. The arithmetic average of the concentration ratio was used for subsidiaries active in multiple SICs. Entry through acquisition should be favored in concentrated markets because it does

not increase capacity (H9), but it should be discouraged by the Federal Trade Commission because it is susceptible to decrease competition. Consequently, we do not make any prediction as to the sign of this variable.

The existence of Penrose constraints on growth through internal development is proxied by two variables, the ratio of the Japanese investor's average annual rate of growth of domestic employment over its rate of growth of domestic sales, both over the 5 year period preceding entry (PSALG), and the relative size of the subsidiary (RELSZ). When employment grows faster than sales and PSALG is high, the firm has excess labor personnel resources, and does not need to obtain them through acquisitions (H12). Hence the sign of PSALG should be negative. The relative size of the subsidiary (RELSZ) is the ratio of the employment of the subsidiary over that of the parent. H13 implies that this variable should take a positive sign.

Following Palepu (1986) and Chatterjee (1990), we measure a firm's financial leverage (LEV) by the ratio of its long term debt to its market value, as reported in its Yukashoken Hokokusho. High leverage should encourage acquisitions (H14).

On a priori grounds, one would expect the degree of ownership taken in a subsidiary to be independent of the mode of entry (greenfield or acquisition). The degree of ownership depends on the parent's need for control (Gatignon and Anderson 1988; Gomes-Casseres 1989; Hennart 1991a), and that desired level of ownership can be attained in either a greenfield investment or an acquisition. Stopford and Wells (1972), however, found that joint venture status was weakly associated with acquisitions. They did not, however, test

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this relationship while controlling for other variables. We control therefore for the parent's level of ownership in the subsidiary, expecting this variable to be insignificant. Joint venture status is captured by a dummy variable (JV) which takes a value of zero if the parent owned 95% or more of the subsidiary's equity, and one if it owned more than 5% but less than 95%. The 95% cutoff point has been used in previous studies on ownership choice (Franko 1971; Stopford and Wells 1972; Gatignon and Anderson 1988; Gomes-Casseres 1989; Hennart 1991a).

The correlation matrix of the independent variables suggests little collinearity. Almost all correlations are low, the highest correlation coefficient being the one between FOLLOW and GROWTHDEV (0.30).

4. Results

The results of the binomial logistic regression are presented in Tables 3 to 6. A positive coefficient means that the independent variable tends to increase the probability that acquisition will be chosen: a negative coefficient signifies the opposite.

Equation 1 in Table 3 reports the results for the full sample. The model, which converged after seven iterations, has a high overall explanatory power, with a chi-square of 55.68 (p=0.0000). One can also measure how well a maximum likelihood model fits the data by using it to classify observations (Amemiya 1981). The classification rate thus obtained can be compared to the rate that would have been obtained by chance. That rate is equal to $a^2 + (1 - a)^2$, where a is the proportion of greenfield investment in the sample (Morison 1974). In our case, that base line rate is 51%. Table 4 shows that 71.1% of

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the observations are correctly classified, a rate higher than that which would be expected by chance. The model's sensitivity rate, which describes its ability to correctly predict positives (acquisitions) leaves room for improvement, but its specificity, its capacity to correctly classify greenfields, is excellent.

All significant variables have the predicted signs, except FOLLOW and PSALG. The coefficient of the Japanese parent's ratio of R&D expenditures to sales (RND), is negative and significant at 0.01 level, as predicted by H1. This confirms the view that R&D-intensive Japanese investors find greenfield investment a more effective way to transfer their advantages to the U.S., as greenfield entry makes it possible to "mold" a virgin management and labor force into the parent's culture. Our result is also consistent with Gittelman and Dunning's (1991) argument that Japanese investors who do not have clear competitive advantages over their U.S. rivals have acquired U.S. firms to strengthen their position.

As predicted by H3, but contrary to the predictions of merger theory (H11), Japanese parents are more likely to enter through acquisition if they intend to manufacture in the U.S. a different product than those they produce at home: the coefficient of COMMON is negative and significant at the 0.01 level. Parents who diversify need tacit industry knowledge and access to distribution, which they can most efficiently obtain through acquisition. Although they measured diversification in slightly different ways, Wilson (1980), Yip (1982), Caves and Mehra (1986), and Zejan (1990) all found that product diversification increased the probability of entry through acquisitions.

GROWTHDEV, the coefficient of the absolute value of the deviation from the mean in the growth of shipment of the target U.S. industry, is positive and significant (at 0.01). As hypothesized, acquisitions are favored when the target industry experiences either very high or very low growth rates. Caves and Mehra's (1986) found this to be also true in their study of foreign investors in the U.S.

The coefficient of the variable describing the Japanese parent's endowment of human resources (PSALG), is significant (at the 0.05 level), but with the wrong sign. We hypothesized earlier that when employment grows faster than sales, the investor is likely to have excess personnel, and hence no need to obtain managers through an acquisition. Because of lifetime employment practices, however, large Japanese firms do not have the option of firing redundant workers, but are expected to reassign them to new tasks. As Roehl (1989) notes, many Japanese firms with excess workers have sought to obtain quickly the complementary resources necessary to develop new activities, and have used U.S. acquisitions to that end. Kubota's and Nippon Kokan's acquisitions of high technology American companies fit this scenario (Roehl 1989). Hence the positive correlation in our case between excess human resources and acquisitions.

The coefficient of the relative size variable, RELSZ, has the correct sign and is significant at 0.01 level. The larger the size of the U.S. operation, the more likely that entry will be through acquisition. Caves and Mehra (1986), who also found this variable significant, argue that when the size of the investment is large relative to that of the parent, greenfield expansion

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is limited by the parent's stock of managerial resources. Because the acquired firm comes with its own management, an acquisition makes it possible to loosen these constraints on growth.

The coefficient of our dummy variable for being a 'follower' (FOLLOW) is significant at 0.05, but negative, suggesting that, contrary to the predictions of Knickerbocker (1973) and Dubin (1976), followers in industries characterized by loose oligopoly tend to enter through greenfield investment. Equations 2 and 3 in Table 3 suggest, however, that the statistical significance of FOLLOW is due to its collinearity with GROWTHDEV. When GROWTHDEV is excluded from the model (equation 3), FOLLOW becomes insignificant, while the coefficient of GROWTHDEV remains significant when FOLLOW is excluded (equation 2). While followers may choose acquisitions to speed their entry, Caves and Mehra (1986) point out that their perceived riskiness of greenfield entry is reduced because they benefit from the experience of leaders. The two effects may cancel out.

The coefficients of the U.S. experience of the Japanese investor (EXP), its advertising intensity (ADV), its diversification ratio (DIV), the relative cheapness of U.S. stocks (RVI), the Japanese firm's leverage ratio (LEV), the concentration ratio of the target U.S.industry (CON), and the subsidiary's joint venture status (JV), are all insignificant.

The lack of significance of our measure of experience EXP is consistent with the results of recent studies: Kogut and Singh (1988) found that the number of previous entries by foreign investors in the U.S. had no influence on the entry mode. Similarly, international experience had no bearing on the

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entry strategies of Swedish MNEs in Zejan's (1990) sample. One possible reason for the lack of significance of experience may be the offsetting impact noted earlier: experienced Japanese investors have less need for acquisitions, but they may feel more comfortable with making them. We explore this further below.

Our finding that advertising intensity (ADV) has no impact on entry may be due to the fact that three fourths of the Japanese entries in our sample are in producer goods industries. Recall that H5 hinges on two crucial assumptions: that established brands are an important asset, and that they cannot be transferred from Japan. While this may be true in consumer goods industries, in producer goods industries brand names are probably less crucial to commercial success, but they are more transferable. Hence we might expect advertising intensive Japanese manufacturers of producer goods to choose greenfield entry, while those in consumer goods industries would choose acquisitions. Pooling entries in producer goods and in consumer goods industries may thus obscure the relationship between advertising intensity and entry mode. We test this hypothesis later in this section.

The insignificant coefficient for the degree of diversification of the Japanese investor (DIV) suggests that a diversified Japanese investor does not have a greater tendency to enter through acquisitions than a less diversified one if it is entering the U.S. to manufacture the same products it manufactures in Japan. In other words, the impact of diversification on entry mode occurs at the business, but not at the corporate level.

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Neither of the two financial variables, the relative value index RVI nor the parent's leverage ratio LEV, are significant.[9] The lack of significance of the relative value index is not surprising. To establish a link between the fall of the dollar and the strength of the Japanese stock market on one hand, and the wave of Japanese acquisitions in the U.S. on the other, one must show that these factors caused the price of U.S. assets in the market for corporate control to fall below the cost of adding new capacity through greenfield investment. Efficient capital markets should (and apparently do) eliminate such bargains for foreign, as well as for domestic investors.

The insignificant coefficient for the Japanese investor's leverage ratio (LEV) probably reflects the idiosyncratic features of Japanese capital markets. Relationships between Japanese banks and corporate borrowers are more intimate and long-term than in the United States, and are often cemented through mutual ownership stakes (Imai and Itami 1984). Hence, while in the American case highly-leveraged firms may have difficulty borrowing to finance greenfield investment, and may then opt for acquisitions, this is probably not true in Japan because of the closer relationships and the greater volume of information interchange between bankers and borrowers. Taken together, the non-significance of these two variables suggests that strategic variables have a stronger impact on the mode of entry than financial ones. Caves and Mehra (1986) reached similar conclusions from their study of entries by foreign investors in the U.S.

The coefficient of the concentration ratio of the target U.S. industry (CON) is just short of significance at the 0.1 level (two tailed test). This variable was also insignificant in Yip's (1982) study. As argued earlier, the

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impact of this variable may be obscured by the fact that, while acquisitions may be more desirable in concentrated industries, they may run afoul of antitrust law.[10] We probe this point further below.

As predicted, the ownership level of the affiliate (JV) has no significant impact on the entry mode. This supports the view that the choice between greenfield entry and acquisition is conceptually separate from the degree of control that a parent seeks for its subsidiary.

Equation 4 in Table 3 investigates further the impact of target industry characteristics. We expect the concentration ratio of the target industry to interact with its rate of growth: when demand is growing rapidly, the capacity-increasing features of greenfield entry are less of a problem in concentrated industries. We therefore create a new variable, GROWCON, to describe the combined impact of concentration and growth rate in the target industry. GROWCON takes the value of the concentration ratio when demand growth in the target industry is negative, and zero otherwise. As expected, the coefficient of GROWCON is positive and significant (at the 0.05 level), indicating that a high concentration ratio leads to acquisition when not offset by demand growth. The coefficient of the target industry growth rate is also positive and significant (at 0.05), suggesting that high growth leads to acquisitions, while that of the concentration ratio is weakly negative (significant at 0.1), implying a tendency by Japanese investors to avoid acquisitions in concentrated industries. The coefficients of all the other variables are basically unchanged. All in all, these results indicate the importance of dynamic considerations in the choice of the mode of entry.

To explore further the impact of the growth rate of the target U.S. industry on Japanese entry strategies, we split the sample into two types of industries. We rank industries according to their rate of growth of shipments for the five years preceding entry. Equation 6 in Table 5 reports the results for entries in industries in the lowest and highest quartiles, while equation 7 reports the coefficients for entries in the two middle quartiles. We would expect transaction cost variables to exert a particularly strong influence in industries with average growth, while in fast and slow growing industries the impact of transaction cost variables would be mitigated by other strategic considerations, such as the need for speedy entry and the impact of entry on industry capacity. As expected, the tendency of R&D-intensive investors to choose greenfield entry is weaker in exceptionally fast and slow growing industries (equation 6). Note that in those industries, acquisitions tend to be partial ones (the coefficient of the joint venture dummy JV is positive and significant at the 0.05 level), suggesting that a partial acquisition is the mode of entry that is least threatening to incumbents in slow growing industries. Transaction cost variables (the investor's R and D intensity and its need for industry-specific knowledge when diversifying), as well as the attractiveness of acquisitions for companies making large investments, take center stage in industries with average rate of growth (equation 7).

Earlier we have argued that one possible reason for the non-significance of our advertising intensity variable may be the fact that our sample pools entries into both consumer and producer goods U.S. industries. We test this hypothesis by focusing, in equation 5 of Table 5, at entries in producer goods industries.[11] As expected, advertising-intensive firms in those industries

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tend to enter through greenfield (the coefficient of ADV is negative and significant at the 0.1 level). The coefficients of the other variables are unchanged, except that the concentration ratio of the target U.S. industry becomes significant (at the 0.1 level, two tailed) and that the diversification ratio of the parent now exerts a significant (at 0.05) and positive impact on acquisitions.

To investigate further the impact of experience on the choice of method of entry, we split the sample between first entries and subsequent entries. In Table 6, equation 8 shows the results for second and subsequent entries. Except for the coefficients of our "follower" dummy (FOLLOW), which now becomes insignificant, and that of the deviation from the target industry demand growth (GROWTHDEV), which is now only significant at 0.05, the coefficients are similar to those of the full sample (equation 1), suggesting that the experience gained from first entries does not affect the subsequent entry choices of Japanese investors. Equation 9 reports the results for first entries. Most coefficients are insignificant. This may be due to the small sample size, to a greater number of 'wrong' entry choices by first-time investors, or to omitted variables.

5. Conclusions

This paper offers the first large sample empirical study of the factors which influence the choice of Japanese firms between acquiring a U.S. firm or establishing a greenfield subsidiary. It studies for the first time the mode of entry used by firms of a single home country into a single host country, thus keeping variations within home and host countries constant. We use

direct measures of parent strategies, such as excess human resources and R&D and advertising intensity, a significant improvement over most previous studies which have used data on the characteristics of the U.S.industries entered as proxies for these parent strategies.

The results from the full sample and from subsamples are robust, and they tell a consistent story. They suggest that the mode of entry chosen by Japanese investors is driven both by firm strategies and target markets characteristics. Japanese MNEs favor greenfield entry when the scale of the U.S. operation is relatively small. They also choose greenfields when they intend to manufacture in the United States a product they already manufacture at home. The more research intensive among Japanese MNEs enter the U.S. through greenfield investments, presumably because it is the most efficient way to transfer their technological advantages to U.S. shores.

In industries characterized by very high or very low growth, the influence of some of these variables is tempered by two other factors which favor acquisitions: acquisitions allow quicker entry, and they do not add to capacity. Hence they are a good choice when demand grows rapidly, or for entry into concentrated industries in which demand is growing slowly or is decreasing.

We test for the impact of both strategic and financial variables. In contrast to much conventional wisdom (Rohatyn 1989), we find that the low value of the dollar and high Japanese stock prices have no statistically significant impact on entry mode. We also consider the Japanese investors' leverage ratios to ascertain whether long term liquidity influences their mode

of entry. It does not, probably because of the particular characteristics of Japanese financial markets.

We also offer the first direct test of the impact of oligopolistic reaction on entry.[12] In contrast to previous studies (Dubin 1976; Caves and Mehra 1986), our test has the advantage of being performed at the level of the firm and of controlling for all the other variables that may influence a firm's entry mode. The results suggest that, everything else constant, followers are no more likely to enter through acquisitions than through greenfield.

1. In closely related research, Amit, Livnat and Zarowin (1989) and Chatterjee (1990) consider the choice between direct entry and acquisition as alternative methods of diversification. Two less directly related studies (Lamont and Anderson 1985; Simmonds 1990) investigate the impact of entry mode (greenfield vs. acquisition) on the success of diversification moves. Because these four studies only consider one type of firm growth, diversification, their result, although generally similar, are not directly comparable to those of the present study.

2. For example, the recent books by Ravenscraft and Scherer (1987) and Auerbach (1988) on mergers and acquisitions do not directly consider mergers and acquisitions as alternatives routes of firm growth.

3. These firm-specific advantages are a type of what Teece (1982) calls "slack internal resources" or what Chatterjee (1990) calls "excess resources".

4. For some anecdotal evidence of management problems following Japanese acquisitions of U.S. firms see Byrne (1986) and Economist (1991).

5. As shown by Graham and Krugman (1989), the fall of the dollar relative to the yen does not per se lead to more Japanese investment. Nor does it per se favor acquisitions over greenfield, since it lowers the cost of all U.S. assets, whether acquired on the market for inputs or that for corporate control. I am indebted to a referee for bringing this point to my attention.

6. Current merger guidelines stipulate that in markets with Herfindahl indexes in excess of 1800 a merger that raises this index will not be permitted without considerable scrutiny (Oster, 1990., p. 198).

7. Kogut and Singh (1988) found that acquisitions accounted for more than half of the 506 cases of foreign investment in the U.S. over the 1981-1985 period. The percentage for U.K. investors was 78 percent.

8. Note that our unit of analysis is the couple of parent-affiliate. Our sample may thus include more than one parent for a given affiliate.

9. Chatterjee (1990) found that a firm's leverage increased the probability it would choose acquisitions, but she only considered diversification modes and did not control for firm strategies.

10. Substituting the target sector's minimum efficient scale for its concentration ratio did not change the results.

11. Industries were classified as producer goods industries if the percentage of their output going directly into consumption and/or wholesale trade was lower or equal to the U.S. average. I am indebted to Thomas Kohn for this data which is calculated from U.S. input-output tables (see Kohn 1988).

12. See Yu and Ito (1988) for the impact of oligopolistic reaction on the decision to invest.

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TABLE 1
DESCRIPTIONS OF SAMPLE POPULATION

1.1 Product Categories of Subsidiaries

SIC	Industries	Population	%	Sample	%	Diff(%)
20	Food & Kindred Products	67	10.15	21	6.29	-3.86
22	Textiles Mill Products	5	0.76	1	0.30	-0.46
23	Apparel & Other Textile Products	18	2.73	3	0.90	-1.83
24	Lumber & Wood Products	8	1.21	1	0.30	-0.91
25	Furniture & Fixtures	4	0.61	0	0.00	-0.61
26	Paper & Allied Products	11	1.67	5	1.50	-0.17
27	Printing & Publishing	6	0.91	2	0.60	-0.31
28	Chemicals & Allied Products	60	9.09	35	10.48	1.39
29	Petroleum & Coal Products	2	0.30	0	0.00	-0.30
30	Rubber & Misc. Plastic Products	49	7.42	15	4.49	-2.93
32	Stone, Clay, & Glass Products	15	2.27	12	3.59	1.32
33	Primary Metal Products	44	6.67	22	6.59	-0.08
34	Fabricated Metal Products	54	8.18	15	4.49	-3.69
35	Industrial Machinery & Equipment	107	16.21	67	20.06	3.85
36	Electronic & Other Electric Equipment	120	18.18	93	27.84	9.66
37	Transportation Equipment	31	4.70	17	5.09	0.39
38	Instruments & Related Products	43	6.52	19	5.69	-0.83
39	Miscellaneous Manufacturing Industries	16	2.42	6	1.80	-0.63
	Total	660	100.00	334	100.00	

1.2 Comparison of Frequencies of Acquisition & Greenfield Investment

Year	1978	1979	1980	1984	1985	1986	1987	Total(%)
Population								
Acquisition	9	12	13	24	29	46	70	203(36.38%)
Greenfield	14	34	22	33	57	69	126	355(63.62%)
Total	23	46	35	57	86	115	196	558(100%)
Sample								
Acquisition	7	4	7	12	19	28	37	114(42.22%)
Greenfield	3	15	5	19	27	37	50	156(57.78%)
Total	10	19	12	31	46	66	88	270(100%)

TABLE 2

SUMMARY OF VARIABLES AND EXPECTED SIGNS
(+ = encourage acquisition)

Variable Name	Description	TC	AC	GF	CI
RND	R&D/sales of parent	−			
EXP	U.S. experience of parent	−	+		
COMMON	similarity of products between parent and subsidiary	−	+		
DIV	parent diversification ratio	+			
ADV	adv/sales of parent	+			
RVI	relative value index		+		
GROWTHDEV	growth of shipments of U.S. industry entered deviates from average		+		
FOLLOW	followers in oligopolistic range		+		
CON	concentration ratio of U.S. industry entered		?		
PSALG	parent's excess supply of managers			−	
RELSZ	relative size subsidiary/parent			+	
LEV	leverage ratio of parent				+

TC = Transaction cost theory
AC = Merger and acquisition theory
GF = Theory of the growth of the firm
CI = Capital market imperfection theory

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TABLE 3
RESULTS OF LOGISTIC REGRESSION: ACQUISITION VS. GREENFIELD INVESTMENT
(acquisition=1)

Variable Name	Description	Standardized Coefficients (t-statistic)			
		1	2	3	4
	Intercept	-0.1963	-0.1921	-0.1999	-0.1992
		(1.27)	(1.25)	(1.32)	(1.29)
RND	R&D/sales of parent	-0.4577	-0.4489	-0.4226	-0.4817
		(2.72)a	(2.65)a	(2.52)a	(2.82)a
EXP	U.S. experience of parent	-0.1930	-0.1708	-0.1419	-0.1879
		(1.25)	(1.13)	(0.94)	(1.21)
ADV	adv/sales of parent	0.1979	0.2321	0.1998	0.1919
		(1.06)	(1.24)	(1.12)	(1.10)
COMMON	sameness of products between	-0.4271	-0.4445	-0.4650	-0.4321
	parent and subsidiary	(2.84)a	(2.96)a	(3.14)a	(2.84)a
DIV	diversification ratio of parent	0.0840	0.0819	0.1067	0.1002
		(0.55)	(0.54)	(0.71)	(0.65)
RVI	relative value index	0.1119	0.0990	0.1006	0.1060
		(0.77)	(0.69)	(0.69)	(0.72)
GROWTHDEV	growth of shipments	0.3757	0.2871		
	of U.S. industry entered	(2.40)a	(1.97)b		
	deviates from average				
FOLLOW	followers in oligopolistic range	-0.2552		-0.1203	-0.2046
		(1.61)c		(0.83)	(1.32)c
CON	concentration ratio	-0.2314	-0.2412	-0.2175	-0.3023
	of U.S. industry entered	(1.58)	(1.63)	(1.51)	(1.94)c
PSALG	parent's endowment of	0.2790	0.2951	0.2711	0.2860
	human resources	(1.58)c	(1.68)b	(1.62)c	(1.65)b
RELSZ	relative size	1.5849	1.5822	1.5290	1.5993
	subsidiary/parent	(4.43)a	(4.44)a	(4.40)a	(4.46)a
LEV	leverage ratio of parent	0.1702	0.2154	0.1796	0.1778
		(1.14)	(1.46)c	(1.20)	(1.18)
JV	type of ownership	0.1613	0.1877	0.1555	0.1465
		(1.09)	(1.28)	(1.06)	(0.99)
GROWTH	growth of shipments				0.3848
	of U.S. industry entered				(2.18)b
GROWCON	interaction between CON				0.3314
	and GROW dummy				(1.99)b
model chi-square		55.68	53.80	50.91	55.60
p value		0.0000	0.0000	0.0000	0.0000
n		270	270	270	270
proportion of correct classifications		71.1	69.6	69.6	71.5

a   p<0.01 b p<0.05   c   p<0.1 (one tailed) (double subscripts=two tailed)

TABLE 4

CLASSIFICATION TABLE FOR EQUATION 1

PREDICTED

	GREENFIELD	ACQUISITION	TOTAL
GREENFIELD	129	27	156
ACQUISITION	51	63	114
TOTAL	180	90	270

TRUE

SENSITIVITY: 55.3%

SPECIFICITY: 82.7%

CORRECT: 71.1%

TABLE 5
RESULTS OF LOGISTIC REGRESSION: ACQUISITION VS. GREENFIELD INVESTMENT
(acquisition=1)

Variable Name	Description	Standardized Coefficients (t-statistic)		
		5	6	7
	Intercept	-0.1857	0.3990	-0.6969
		(0.80)	(1.56)	(2.89)aa
RND	R&D/sales of parent	-0.4177	-0.3521	-0.4406
		(2.04)b	(1.40)c	(1.86)b
EXP	U.S. experience of parent	-0.1009	-0.3502	-0.2805
		(0.54)	(1.53)	(1.12)
ADV	adv/sales of parent	-0.9734	0.2961	0.2874
		(1.33)c	(1.29)c	(0.82)
COMMON	sameness of products between	-0.4862	-0.3914	-0.5902
	parent and subsidiary	(2.86)a	(1.96)b	(2.22)b
DIV	diversification ratio of parent	0.3249	0.6211	-0.2158
		(1.68)b	(2.52)a	(1.00)
RVI	relative value index	-0.1166	-0.0376	0.2009
		(0.65)	(0.17)	(0.95)
GROWTHDEV	growth of shipments	0.3199		
	of U.S. industry entered	(1.84)b		
	deviates from average			
FOLLOW	followers in oligopolistic range	-0.0542	-0.0759	-0.2290
		(0.28)	(0.35)	(0.98)
CON	concentration ratio	-0.3169	-0.2495	-0.2812
	of U.S. industry entered	(1.78)cc	(1.02)	(1.26)
PSALG	parent's endowment of	0.3606	0.4430	0.4278
	human resources	(1.63)c	(1.90)b	(0.79)
RELSZ	relative size	2.0536	2.3383	1.2829
	subsidiary/parent	(4.08)a	(3.47)a	(2.70)a
LEV	leverage ratio of parent	0.1815	0.2155	0.1832
		(0.99)	(1.00)	(0.75)
JV	type of ownership	0.2022	0.4696	-0.1240
		(1.12)	(2.09)b	(0.56)
model chi-square		43.28	31.51	33.43
p value		0.0000	0.0016	0.0008
n		198	134	136
proportion of correct classifications		75.3	70.1	72.1

a   p<0.01 b p<0.05 c   p<0.1   (one tailed) (double subscripts=two tailed)

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TABLE 6

RESULTS OF LOGISTIC REGRESSION: ACQUISITION VS. GREENFIELD INVESTMENT
(acquisition=1)

Variable Name	Description	Standardized Coefficients (t-statistic)	
		8	9
	Intercept	0.0477	-0.6314
		(0.21)	(2.07)bb
RND	R&D/sales of parent	-0.5350	-0.5216
		(2.51)a	(1.58)c
ADV	adv/sales of parent	0.0468	0.5286
		(0.22)	(1.10)
COMMON	sameness of products between	-0.5990	-0.0950
	parent and subsidiary	(3.08)a	(0.35)
DIV	diversification ratio of parent	0.1237	-0.2332
		(0.59)	(0.97)
RVI	relative value index	0.1896	-0.0662
		(1.01)	(0.26)
GROWTHDEV	growth of shipments	0.3457	0.1228
	of U.S. industry entered	(1.94)b	(0.28)
	deviates from average		
FOLLOW	followers in oligopolistic range	-0.2556	-0.2568
		(1.20)	(0.99)
CON	concentration ratio	-0.1751	-0.5511
	of U.S. industry entered	(0.97)	(1.64)
PSALG	parent's endowment of	0.2793	0.1407
	human resources	(0.28)	(0.77)
RELSZ	relative size	2.0807	1.2824
	subsidiary/parent	(3.94)a	(2.41)a
LEV	leverage ratio of parent	0.0175	0.3025
		(0.08)	(1.22)
JV	type of ownership	0.1251	0.2202
		(0.64)	(0.82)
model chi-square		36.90	24.62
p value		0.0002	0.0167
n		168	102
proportion of correct classifications		72.0	72.5

a   p<0.01 b p<0.05 c   p<0.1   (one tailed) (double subscripts=two tailed)

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